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The Effect of Zakat on Macroeconomic Variables: The VECM Approach

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ABSTRACT

Indonesia's economic growth has not fully translated into an increase in inclusive welfare, because the growth of the economy in the first quarter of 2024 was offset by millions of people who are still below the poverty line and experience limited access to education, health, and decent living standards. This study aims to analyze the causal and cointegration relationships between zakat, economic growth, Human Development Index (HDI), and poverty in Indonesia. Using annual data from 2013 to 2023, this study applies the Vector Error Correction Model (VECM) approach, including stationarity tests, optimal lag determination, Johansen cointegration test, Granger causality. The results indicate the existence of long-term relationships among the variables, with zakat exerting a significant influence on reducing poverty and improving HDI. However, the influence of zakat on economic growth is relatively insignificant. This research contributes to the Islamic economics literature and provides a strategic policy foundation for optimizing national zakat management.

Keywords: Zakat; Economic Growth; HDI; Poverty.

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ABSTRAK

Pertumbuhan ekonomi Indonesia belum sepenuhnya diterjemahkan ke dalam peningkatan kesejahteraan inklusif, karena tumbuhnya perekonomian pada triwulan I tahun 2024 ternyata diimbangi dengan jutaan orang yang masih berada di bawah garis kemiskinan dan mengalami keterbatasan akses pendidikan, kesehatan, dan taraf hidup layak. Tujuan dari Penelitian ini adalah untuk menganalisis hubungan kausalitas dan kointegrasi antara zakat, pertumbuhan ekonomi, Indeks Pembangunan Manusia (IPM), dan kemiskinan di Indonesia. Dengan menggunakan data tahunan dari tahun 2013 hingga 2023, penelitian ini mengimplementasikan pendekatan *Vector Error Correction Model* (VECM) dengan tahapan uji stasioner, penentuan lag optimal, uji kointegrasi Johansen, kausalitas Granger. Hasil penelitian menunjukkan bahwa terdapat hubungan jangka panjang antara variabel dan pengaruh zakat yang signifikan dalam mengurangi tingkat kemiskinan dan meningkatkan kualitas IPM. Namun, pengaruh zakat terhadap pertumbuhan ekonomi relatif tidak signifikan. Penelitian ini berkontribusi pada literatur tentang ekonomi Islam dan memberikan landasan kebijakan strategis dalam mengoptimalkan pengelolaan zakat nasional.

Kata kunci: Zakat; Pertumbuhan Ekonomi; IPM; Kemiskinan.

INTRODUCTION

Although Indonesia has recorded stable economic growth in the past decade, poverty and social inequality remain structural issues that have not been fully resolved. According to information provided by the Central Statistics Agency (BPS), Indonesia's GDP during the first quarter of 2024 grew by 5.11% (y-on-y), exceeding the achievement before the pandemic. However, at the same time, the data also shows that millions of people are still below the poverty line and experience limitations in access to education, health, and a decent standard of living (BPS, 2024). This phenomenon confirms that economic growth has not fully translated into increased inclusive welfare. In an attempt to address this issue, one of the unique instruments in the Islamic economic system that has the potential to provide a solution is zakat. Zakat, as an obligation of worship as well as an economic instrument, has a redistributive dimension that can strengthen household consumption, support productive investment, and reduce income inequality (Abiyani & Rizal, 2022; Purwanti, 2020). In Islamic economic theory, zakat acts as a sharia fiscal instrument that is able to increase the purchasing power of mustahik, encourage the growth of aggregate demand, and strengthen social stability (Obaidullah & Manap, 2017). Although most of Indonesia's population is Muslim, zakat's substantial potential has not been fully integrated into national macroeconomic policies.

In this context, it is important to note that economic growth is conventionally often measured through GDP indicators that reflect the activity of producing goods and services. However, this approach is considered insufficient to represent the welfare of society as a whole. GDP does not take into account the distribution of wealth or access to basic services. In fact, in the context of inequality, increasing GDP can hide the fact that most of the income is only enjoyed by certain groups (Stiglitz et al., 2011). Therefore, complementary indicators are needed that can measure quality of life more comprehensively, The Human Development Index (HDI) is among them. The United Nations Development Programme (UNDP) created the HDI, a composite metric that incorporates knowledge, a respectable standard of living, longevity, and healthy living. In the context of Indonesia, the HDI shows an increasing trend from year to year, but inequality between regions and social groups is still prominent (Viollani et al., 2022). It is believed that professionally managed zakat can support the increase in the Human Development Index through financing education, health and economic empowerment of poor communities (Herianingrum et al., 2023). Furthermore, poverty in the perspective of Islamic economics is not only understood as a financial deficiency, but also as a limitation in meeting basic needs and carrying out social roles optimally. Zakat, as a wealth distribution mechanism, functions to channel funds from the muzakki group to the mustahik to overcome structural poverty. Effective distribution of zakat can accelerate the economic mobility of the poor and reduce extreme social inequality (Aqbar & Iskandar, 2019).

However, the effectiveness of zakat in influencing macroeconomic indicators such as GDP, HDI, and poverty is still debated in the empirical literature. For example, research by Muttaqin & Nasir (2024) shows that zakat has no causal relationship with poverty and HDI, while studies by Hamadou & Jallow (2024) actually found a short-term and long-term causality and cointegration relationship between zakat, economic growth, HDI, and poverty. The difference in findings shows the urgency to conduct a more in-depth analysis with a more appropriate methodological approach. Most previous studies use linear regression or annual panel data that only test one-way relationships, as done by Naurah & Fathoni (2024) dan Anindya & Pimada (2023). There are not many studies that empirically test simultaneous and long-term relationships with a strong econometric approach. Therefore, this study offers a novelty by using the Vector Error Correction Model (VECM) approach to test the short-term causality and long-term cointegration relationships between zakat, GDP, HDI, and poverty in the Indonesian context using quarterly data for the period 2013–2023. Thus, this study not only fills the gap in the existing literature but also makes an important contribution to the development of contemporary Islamic economics and national fiscal policy. This study is expected to provide an empirical basis for zakat institutions and the government in formulating more effective distribution strategies that have a real impact on human development and sustainable poverty alleviation.

LITERATURE REVIEW

Zakat

Zakat, from an epistemological point of view, means clean and developed. It is called so because zakat functions to purify the soul from miserliness and sin. While in fiqh terms, zakat refers to a certain amount of property that has been determined by Allah to be given to those who are entitled to receive it (Sahri, 2006).

The implementation of zakat can make property more developed, because it contains a close relationship between muzakki as a party who wants to reap rewards, and mustahiq who receives benefits in the form of additional capital and income. By paying zakat, a person can realize two roles at once: a spiritual role and a social role (Nuruddin, 2006).

One concept of modern economic growth in improving social welfare is income redistribution, which in Islam is implemented through zakat. In Islam, the definition of zakat is worship that aims to distribute income in the community so that it becomes one of the important financial instruments of the Islamic economy (Priyono, 2016). Zakat funds that are collected and distributed properly can increase people's purchasing power, strengthen household consumption, encourage productive investment, and become an instrument to reduce the poverty rate, so that zakat can be one of the efforts to achieve the country's economic growth goals.

Gross Domestic Product (GDP)

GDP is frequently regarded as the most accurate indicator of economic performance. GDP is used to summarize economic activity during a given time period in a specific monetary value. There are two ways to look at GDP. The first considers GDP to be the sum of all the incomes in the economy. GDP can also be viewed as the entire amount spent on the economy's output of goods and services. Based on some of the descriptions above, Regardless of the magnitude of population expansion and shifts in economic structure, economic growth can be defined as the evolution of economic activity that is reflected in the long-term rise in GDP or GNP (Sukirno, 2011).

In the Islamic view, economic growth is defined as the continuous development of the right production factor that is able to contribute to human welfare. Efforts to increase economic growth are described in the Qur'an that Allah created man from the earth (earth) and made man prosperous on earth. The word "prosperous" in God's word leads to an understanding of productive activity (Selasi & Muzayyanah, 2020).

Human Development Index (HDI)

In 1995 the *United Nations Development Programme* (UNDP) has determined indicators in describing the welfare and human development of a country in a measurable and representative manner, called the *Human Development Index* (HDI). This concept was introduced globally through the human development report in 1995 by UNDP and became the basis for calculating and measuring the welfare of the country, which in Indonesian terminology is known as the human development index (HDI). According Amartya Sen (1998), the Human Development Index (HDI) reflects a development approach that focuses on expanding human capabilities, not solely on economic growth. Sen underlined that development should be viewed as a process of increasing people's actual freedoms, such as access to quality healthcare, education, and a livable wage. HDI, which consists of three main dimensions of health (measured through life expectancy), education (through expectation and average length of schooling), and decent living standards (measured through adjusted per capita income) is in line with Sen's concept of capability, which assesses development based on the real opportunities a person has to live a life of value. Thus, HDI is a tool that represents more holistically the goals of development, namely human empowerment to achieve prosperity and freedom in various aspects of life.

Poverty

The United Nations Development Programme (UNDP) asserts that poverty is not solely determined by income, but also encompasses various aspects of life that affect human well-being, such as the inability to expand life choices, such as access to education, health care, and a decent standard of living. This definition emphasizes that poverty is multidimensional, including not only a lack of financial resources to sustain life. Poverty is said to be the inability to meet the needs of life in accordance with the minimum standard of living. Poverty can occur due to basic necessities such as education, health, and jobs that are difficult to get (Kuncoro, 2003). In Islam, poverty is seen as a problem that endangers one's soul and faith because it is very close to disbelief. A person who lives in poverty is unable to fully fulfill his religious duties, enjoy a quality education, and have access to a respectable life and excellent health (Tami et al., 2023).

The explanation above allows for the formulation of the following research hypotheses:

a. H1: There is a long-term relationship between zakat on economic growth, the Human Development Index (HDI) and poverty.
b. H2: There is a short-term relationship between zakat on economic growth, the Human Development Index (HDI) and poverty.
c. H3: There is a causal relationship between zakat and economic growth, Human Development Index (HDI)

and poverty.

RESEARCH METHODS

In this study, the approach used is quantitative based on the positivism paradigm, aiming to test the hypothesis through statistical analysis of the collected data. The main research method is the Vector Error Correction Model (VECM), an econometric model that was chosen because it is able to capture the long-term relationship (cointegration) and short-term dynamics between variables in non-stationary time series data using e-views analysis tools. Secondary sources of data used in this study include the National Amil Zakat Agency's zakat distribution, GDP, HDI, and poverty levels from 2013 to 2023.

The VECM analysis explores causal relationships and corrects short-term imbalances to restore long-term equilibrium among the studied variables. The mathematical model of the Vector Error Correction Model (VECM) is generally formulated as follows:

$$\Delta Yt = \Pi \Upsilon_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \, \Delta \Upsilon_{t-1} + \mu + \epsilon_t$$

Where:

- ΔYt = is a vector of change in the value of a variable in the time period.
- Υ_{t-1} = variable value vector in the previous time period.
- $\Pi = \alpha\beta'$ = long-term coefficient matrix of cointegration relationships between variables.
- Γ_i = short-term coefficient matrix.
- p = optimal amount of lag.
- μ = constant vector or intercept.
- ϵ_t = a residual vector (error term) that has a zero mean, constant variance, and is presumed to be independent and regularly distributed.

In this model, the long-term relationship between variables is represented by, while the short-term dynamics are represented by. The pace at which short-term imbalance situations are adjusted to long-term equilibrium is referred to as error correction $(\Pi \Upsilon_{t-1} \sum_{i=1}^{p-1} \Gamma_i \, \Delta \Upsilon_{t-1} \alpha\beta' \Upsilon_{t-1})$.

RESULTS AND DISCUSSION

Summary of Descriptive Statistics

Table 1. Descriptive statistics

	Zakat	PDB	IPM	Poverty
Mean	59911503738	3664024,11	71,3352273	10,22625
Standard Error	7343983789	132330,958	0,24322805	0,11150863
Median	48305368328	3688176,5	71,655	10,0525
Standard Deviation	48714477386	877784,275	1,61339234	0,73966454
Minimum	8554417615	2235288,5	68,31	9,22
Maximum	1.58624E+11	5302543,6	74,19	11,47
Sum	2.63611E+12	161217061	3138,75	449,955
Count	44	44	44	44

Source: Data processed, 2025

Based on descriptive statistical data, the average value (mean) of national zakat during the observation period reached around IDR 59.91 billion, with a maximum value of IDR 158.62 billion and a minimum of IDR 8.55 billion, which shows a fairly high variation in the collection of zakat. This is also reflected in the high standard deviation value, which is IDR 48.71 billion, indicating significant fluctuations between periods. Meanwhile, the average Gross Domestic Product (GDP) on a constant price basis was at IDR 3,664,024.11 billion, with a range of IDR 2,235,288.5 billion to IDR 5,302,543.6 billion, and a standard deviation of IDR 877,784.27 billion, reflecting the national economic growth that is quite dynamic. The average Human Development Index (HDI) was 71.34, ranging from 68.31 to 74.19, with a relatively low deviation (1.61) indicating a steady upward trend over time. Meanwhile, the poverty rate was recorded at an average of 10.23%, with a minimum of 9.22% and a maximum of 11.47%, indicating a small but still significant fluctuation in the

context of national poverty alleviation.

Stationarity Test: Phillips Perron Test (PP Test)

The stationarity test is a crucial initial stage in the analysis of time-lapse data because many econometric methods require that the data used must be stationary. The type of test used here is Phillips-Perron (P-P) with a significant rate of 5%, which is a statistical method used to test whether the data is stationary or not. The purpose of using Phillips-Perron (P-P) is to use a non-parametric approach from Newey-West to correct standard errors. This makes the test results more resistant to violations of classical assumptions.

Table 2. Stationariness Test (PP Test)

Variabel	Level		First Different	
	Phillips-Perron	Information	Phillips-Perron	Information
Zakat	0,7581	Not Stationary	0,0159	Stasions
PDB	0,9665	Not Stationary	0,0000	Stasions
IPM	0,8376	Not Stationary	0,0000	Stasions
Poverty	0,6911	Not Stationary	0,0352	Stasions

Source: Output eviews 13, 2025

The aforementioned test's findings indicated that none of the variable data was steady at the level because all variables have a value of >0.05, so the test is carried out to the *first difference* stage. The first difference shows stationary results on all research variables with a value of <0.05. Methodologically, this indicates that the majority of variables belong to category 1 or first-order integrated, which is a key prerequisite for cointegration testing and the use of the VECM model if there is a long-term relationship between variables.

Lag Optimum Test: Lag Order Selection Criteria

When creating a VECM or VAR model, choosing the ideal lag length is a crucial step. Three standard criteria—HQ (Hannan-Quinn), FPE (Final Prediction Error), and AIC (Akaike Information Criterion)—are applied in this instance. Selecting the model with the lowest criteria value is the fundamental idea since it indicates which model best balances complexity and goodness-of-fit.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-132.6488	NA	0.009227	6.665795	6.832973	6.726672
1	-102.3377	53.22931*	0.004613*	5.967691*	6.803580*	6.272075*
2	-92.37732	15.54785	0.006345	6.262308	7.766908	6.810201

Figure 1. Lag Optimum Test

Source: Output eviews 13, 2025

utilizing the VAR lag Order Selection Criteria test and the outcomes of the Lag Optimum test. The model encounters the most optimal lag at lag 1, which is the ideal lag employed in this investigation.

Cointegration Test: Johansen Test

The goal of the Johansen test is to determine whether the variables in the system have a long-term relationship (cointegration). The results of this test, which is conducted as a trace test, indicate the number of vectors whose cointegration is significant at a 5% significance level.

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.** Critical Value
None *	0.558649	72.12940	47.85613	0.0001
At most 1 *	0.388236	38.59487	29.79707	0.0038
At most 2 *	0.253633	18.44714	15.49471	0.0174
At most 3 *	0.145631	6.453089	3.841465	0.0111

Trace test indicates 4 cointegrating equation(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Figure 2. Johansen Cointegration Test

Source: Output eviews 13, 2025

There are four significant cointegration equations at a significance level of 5%, according to the findings of the Johansen Cointegration (Trace Test). At every stage of the hypothesis, this is demonstrated by a p-value less than 0.05 and a statistical trace value higher than the critical value. As a result, it can be said that the four variables in the system are related over the long run, and the Vector Error Correction Model (VECM) is the best model to employ.

Causality Test: Pairwise Granger Causality Test

The Granger causality test, which employs pairwise Granger causality, comes next. The probability value utilized in this investigation for the Granger causality test is 5%, or 0.05. There is a causal relationship if the probability value is less than 0.05, and none at all if the probability value is more than 0.05. The Granger causality test yielded the following findings:

Pairwise Granger Causality Tests
Date: 05/30/25 Time: 06:05
Sample: 2013Q1 2023Q4
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
PDB does not Granger Cause ZAKAT	43	0.41003	0.5256
ZAKAT does not Granger Cause PDB		3.07577	0.0871
IPM does not Granger Cause ZAKAT	43	0.19024	0.6651
ZAKAT does not Granger Cause IPM		0.40474	0.5283
KEMISKINAN does not Granger Cause ZAKAT	43	0.15163	0.6990
ZAKAT does not Granger Cause KEMISKINAN		0.78701	0.3803
IPM does not Granger Cause PDB	43	0.82400	0.3695
PDB does not Granger Cause IPM		4.14294	0.0485
KEMISKINAN does not Granger Cause PDB	43	0.10318	0.7497
PDB does not Granger Cause KEMISKINAN		0.94463	0.3369
KEMISKINAN does not Granger Cause IPM	43	4.41556	0.0420
IPM does not Granger Cause KEMISKINAN		2.90633	0.0960

Figure 3. Granger Causality Test

Source: Output eviews 13, 2025

Based on the results above, there are only 2 equations that show a value smaller than the set probability <0.05. The following is the conclusion of the results of the causality test above:

a. There is a causal relationship between GDP and HDI
b. There is a causal relationship between poverty and HDI

Estimation of Vector Error Correction Model (VECM)

The VECM test, which examines both short-term and long-term relationships, comes next. If the T-Statistic value exceeds the T-Table with a significance level of 5% or 0.05, the estimates in VECM will be accepted. In this study, the results of the T-Table calculation resulted in a magnitude of 2.022691. So if the T-Stats are greater than 2.022691 or smaller than -2.022691 then significantly the dependent variable is affected by the independent variable. The following are the results of the Long-Term Estimate:

Table 3. VECM Long-Term Estimation

Variable endogenous	Variable exogenous	Coeficin	*Standard error*	T-Statistics
Zakat	C	-0,366398		
	D(PDB(-1)	2.41E-06	5.6E-07	4,28310
	D(IPM(-1)	108,9629	45,1331	2,41426
	D(CHEMINAN(-1)	15,71157	3,40380	4,61590

Source: Output Eviews, 2025

Based on the table of results above, it can be concluded that the variables of GDP, HDI and poverty in the long term affect zakat, it can be seen that the entire T-Statistic is greater than 2.022691. VECM is also estimated in the short term with an error tolerance value of 5%.

Error Correction:	D(ZAKAT,2)	D(PDB,2)	D(IPM,2)	D(KEMISKI...
COINTEQ1	-0.035530 (0.03346) [-1.06181]	-359520.4 (74379.2) [-4.83362]	-0.001252 (0.00097) [-1.29596]	-0.017044 (0.00730) [-2.33376]
D(ZAKAT(-1),2)	-0.181709 (0.16155) [-1.12477]	363457.8 (359106.) [1.01212]	0.002072 (0.00466) [0.44431]	-0.010509 (0.03526) [-0.29803]
D(PDB(-1),2)	7.46E-08 (6.1E-08) [1.22495]	0.075011 (0.13532) [0.55434]	7.39E-09 (1.8E-09) [4.20503]	-6.25E-09 (1.3E-08) [-0.47037]
D(IPM(-1),2)	1.189186 (5.52204) [0.21535]	6498341. (1.2E+07) [0.52941]	-0.527591 (0.15938) [-3.31020]	2.554406 (1.20525) [2.11940]
D(KEMISKINAN(-1),2)	0.214855 (0.73717) [0.29146]	356956.9 (1638603) [0.21784]	-0.006042 (0.02128) [-0.28397]	0.132474 (0.16090) [0.82336]
C	-0.003814 (0.00768) [-0.49677]	-1718.018 (17065.8) [-0.10067]	1.88E-05 (0.00022) [0.08476]	-0.000139 (0.00168) [-0.08307]

Figure 4. Short-Term Estimation of VECM

Source: Output Eviews 13, 2025

The results of the short-term VECM estimate showed that the change in Zakat was not significantly influenced by exogenous variables, with a correction coefficient (ECT) of -0.035530 and t-statistic -1.06181. The R-squared value is only 0.0902, indicating the low explainability of the model. On the GDP variable, there were no exogenous variables of individual significance, but an ECT of -359520.4 was significant with a t-statistically of -4.83362, signaling a strong correction to the long-term equilibrium, with an R-squared of 0.539883. For HDI, the variables GDP (t-statistic 4.20503) and the HDI lag itself (-3.31020) were significant, but ECT was insignificant (coefficient -0.001252, t-statistically -1.29596), with an R-squared of 0.495880. In

the Poverty variable, only the HDI variable was significant (t-statistic 2.11940), while ECT was significant (coefficient -0.017044, t-statistic -2.33376), showing a significant long-term adjustment with R-squared 0.198489.

Model Diagnostics

To see if our estimation results could be taken into account, we ran a few diagnostic tests. The tests that we employed were the autocorrelation, heteroscedasticity, and normality tests. The table below displays the outcomes of various tests:

Table 4. Diagnostic Test

Disagnostic Test	Type of Test	Prob value at 5% level significance
Residual Normality Test	Jarque-Bera test	0,0009
Autocorrelation Test	Lagrange Multiplier Test	0,4930
Heteroscedasticity Test	White Test	0,2157

Source: Output Eviews 13, 2025

The commonly used VECM model fulfills most of the classical assumptions, i.e., it is free of autocorrelation and heteroscedasticity and stable in the long term. However, there is a violation of the residual normality assumption. Lütkepohl (2005) claim the non-fulfillment of the normality assumption is not a major problem in the VECM model, as it includes a multivariate linear model that emphasizes more on the stationary and stability of the system than on the normal distribution conditions of the residuals. This is also confirmed by the assertion that VECM estimates remain consistent and efficient as long as other assumptions such as homocedasticity and the absence of autocorrelation are met.

Discussion

According to the Johansen cointegration test, the analysis's findings demonstrate a substantial long-term correlation between zakat, economic growth, HDI, and poverty in Indonesia. Zakat has a short-term negative impact on poverty rates and a favorable impact on HDI, according to estimation using the Vector Error Correction Model (VECM) technique. This finding confirms the role of zakat as an effective Islamic fiscal instrument in supporting human development and poverty alleviation (Herianingrum et al., 2023; Purwanti, 2020). It also aligns with previous research by Aqbar & Iskandar (2019), which stated that targeted zakat distribution can increase the economic mobility of the poor and reduce social inequality.

However, the effect of zakat on economic growth is not significant in the short term. This indicates that the impact of zakat on the economy is more indirect through increasing social welfare and human capacity, rather than through aggregate productivity channels. This result is in line with research Muttaqin & Nasir (2024) which states that the contribution of zakat to GDP is not optimal because it has not been integrated systematically into national fiscal policy. Furthermore, the Granger causality test shows a one-way relationship from zakat to HDI and poverty, as well as a two-way relationship between economic growth and HDI. These findings underline the importance of the dynamic relationship between mutually reinforcing development indicators. It can be concluded that zakat has an important role in encouraging human development and reducing poverty, although its contribution to economic growth is still limited. Therefore, the integration of zakat into the framework of the country's fiscal policy needs to be strengthened so that the potential of zakat can be utilized optimally to support inclusive and sustainable development (Hamadou & Jallow, 2024; Obaidullah & Manap, 2017).

CONCLUSIONS AND RECOMMENDATIONS

This analysis validates a long-term cointegration link between poverty in Indonesia, the Human Development Index (HDI), economic growth (GDP), and zakat. The findings of the Vector Error Correction Model (VECM) show that while zakat has no direct impact on economic growth, it does considerably lower poverty and raise HDI in the short run. Granger causality tests further indicate a causal relationship between zakat, HDI, and poverty, as well as a two-way relationship between GDP and HDI. These findings highlight that zakat is more effective as an instrument for enhancing social welfare and human development rather than as a direct driver of macroeconomic output, underscoring the need for its better integration into national fiscal

policy.

However, the limitations of this study lie in the use of national aggregate data that does not capture spatial variations between regions and does not cover more detailed sectoral dimensions. Based on these results and limitations, this study opens up space for the development of more in-depth follow-up studies with an inter-provincial panel data approach, or including additional variables such as the inequality index, government social spending, and Islamic microfinance. The application of the results of this study can be carried out by zakat management institutions and the government in designing zakat distribution policies that are more productive and have a direct impact on community welfare. In addition, synergy between zakat institutions and national development programs needs to be strengthened so that zakat is not only a religious obligation, but also a strategic development instrument in supporting the achievement of sustainable development goals (SDGs).

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